This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended) A method of hematopoietic cells transplantation comprising the steps of:

(a) obtaining hematopoietic cells, to be transplanted from a donor;

(b) providing said hematopoietic cells *ex vivo* with conditions for cell proliferation and, at the same time, for reducing a capacity of said cells in utilizing ~~cooper~~ copper, thereby expanding a population enriched for CD_{34}+ cells of said hematopoietic cells, while at the same time, inhibiting differentiation of said cells; and

(c) transplanting said cells to a patient.

Claim 2 (original): The method of claim 1, wherein said donor and said patient are a single individual.

Claim 3 (canceled)

Claim 4 (currently amended): The method of claim ~~3~~ 1, wherein obtaining said hematopoietic cells further includes enriching said cells for stem cells.

Claim 5 (currently amended): The method of claim ~~3~~ 1, wherein obtaining said hematopoietic cells further includes enriching said cells for progenitor cells.

Claim 6 (original): The method of claim 1, wherein reducing said capacity of the cells in utilizing copper is effected by a transition metal chelator having an affinity to copper.

Claim 7. (previously amended): The method of claim 6, wherein said transition metal chelator is tetraethylenepentamine.

Claim 8 (original): The method of claim 1, wherein providing the cells with said conditions for cell proliferation include providing the cells with nutrients and with cytokines.

Claim 9 (original): The method of claim 8, wherein said cytokines are early acting cytokines.

Claim 10 (previously amended) The method of claim 9, wherein said early acting cytokines are stem cell factor.

Claim 11 (original): The method of claim 8, wherein said cytokines are late acting cytokines.

Claim 12 (previously amended): The method of claim 11, wherein said late acting cytokines are granulocyte/macrophage colony stimulating factor.

Claim 13 (currently amended): The method of claim 1, wherein said cells are derived from ~~a source selected from the group consisting of bone marrow, peripheral blood and~~ neonatal umbilical cord blood.

Claim 14 (cancelled)

Claim 15 (original): The method of claim 1, wherein said cells are selected from the group consisting of non-differentiated stem cells and committed progenitor cells.

Claims 16-36 (cancelled)

Claim 37 (currently amended): A method of adoptive immunotherapy comprising the steps of:

(a) obtaining progenitor hematopoietic cells from a patient;

(b) providing said hematopoietic cells *ex vivo* with conditions for cell proliferation and, at the same time, for reducing a capacity of said cells in utilizing ~~cooper~~ copper, thereby expanding a population enriched for CD_{34}+ cells of said

hematopoietic cells, while at the same time, inhibiting differentiation of said cells; and

(c) transplanting said cells to a patient.

Claim 38 (original): The method of claim 37, wherein reducing said capacity of the cells in utilizing copper is effected by a transition metal chelator having an affinity to copper.

Claim 39 (currently amended): The method of claim 38, wherein said transition metal chelator is ~~selected from the group consisting of polyamine chelating agents, ethylendiamine, diethylenetriamine, triethylenetetramine, triethylenediamine,~~ tetraethylenepentamine~~, aminoethylethanolamine, aminoethylpiperazine, pentaethylenehexamine, triethylenetetramine hydrochioride, tetraethylenepentamine hydrochloride, pentaethylenehexamine hydrochloride, tetraethylpentamine, captopril, penicilamine, N,N' bis(3 aminopropyl) I,3 propanediamine, N,N,Bis (2 animoethyl) 1,3 propane diamine, 1,7 dioxa 4,1 0 diazacyclododecane, 1,4,8,11 tetraaza cyclotetradecane 5,7 dione, 1,4,7 triazacyclononane trihydrochioride, 1 oxa 4,7,10 triazacyclododecane, 1,4,8,12 tetraaza cyclopentadecane, 1,4,7,10 tetraaza cyelododeeane~~.

Claim 40 (original): The method of claim 37, wherein providing the cells with said conditions for cell proliferation include providing the cells with nutrients and with cytokines.

Claim 41 (original): The method of claim 40, wherein said cytokines are early acting cytokines.

Claim 42 (currently amended): The method of claim 41, wherein said early acting cytokines are ~~selected from the group consisting of~~ stem cell factor~~, FLT3 ligand, interleukin 6, thrombopoietin and interleukin 3~~.

Claim 43 (original): The method of claim 40, wherein said cytokines are late acting cytokines.

Claim 44 (currently amended): The method of claim 42, wherein said late acting cytokines are ~~selected from the group consisting of granulocyte colony stimulating factor,~~ granulocyte/macrophage colony stimulating factor ~~and erythropoietin~~.

Claim 45 (currently amended): The method of claim 37, wherein said cells are derived from ~~a source selected from the group consisting of bone marrow, peripheral blood and~~ neonatal umbilical cord blood.

Claim 46 (cancelled)

Claim 47 (original): The method of claim 37, wherein said cells are selected from the group consisting of non-differentiated stem cells and committed progenitor cells.